

WHAT IS CLAIMED IS:

1. A collaboration network system in which a first system operating in accordance with a first sequence is connected to a second system operating in accordance with a second sequence, and  
5 said second system primarily executes a sequence operation while utilizing a resource of said first system,

said first system comprising

an interface means incorporated into an application layer executing said first sequence,

10 said second system comprising:

a distribution criteria storing means for storing distribution criteria to distribute said sequence operation to said first system; and

a job execution requesting means for issuing said  
15 interface means, in accordance with said distribution criteria, with a job execution request for having said first system execute a job, wherein

when receiving said job execution request, said first system executes said job execution request as a part of said first  
20 sequence via said interface means.

2. The collaboration network system according to Claim 1, wherein said job execution requesting means

comprises a job determining means for determining,  
25 in accordance with said distribution criteria, said job to be

executed in said first system to generate job request information ,  
and

generates said job execution request in accordance  
with said job request information.

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3. The collaboration network system according to Claim 1, wherein,  
when receiving said job execution request, said first system  
executes said job execution request as a part of said first  
sequence via said interface means, and further returns a result  
10 of execution to said second system.

4. The collaboration network system according to Claim 1, wherein  
said interface means further comprises an initial program storing  
means for storing an initialization program,

15 after said interface means running said initialization  
program, said first system is caused to detect said resource  
included in said first system to notify said second system,

said second system determines, in accordance with said  
resource of said first system detected by said interface means  
20 and said distribution criteria stored in said distribution  
criteria storing means, tasks for every job to be executed as a  
sequence operation of said first system, and then generates  
collaboration processing information, and

said job execution requesting means issues said job  
25 execution request in accordance with the collaboration processing

information.

5. The collaboration network system according to Claim 4, wherein  
said interface means further comprises a guest net client  
5 information storing means for storing a processing program  
executing said first sequence registered in said first system,  
said initialization program detects initialization  
information registered in said first system to store in said guest  
net client information storing means, and

10 said job execution requesting means generates said  
collaboration processing information in accordance with  
initialization information stored in said guest net client  
information storing means and distribution criteria information  
reserved in said distribution criteria information storing means.

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6. The collaboration network system according to Claim 5, wherein  
said collaboration processing information comprises

a procedure to process tasks for every job and addressee  
information, wherein

20 said addressee information comprises server information,  
a program number, version information, and applicable resource  
information.

7. The collaboration network system according to Claim 6, wherein  
25 said server information

comprises an IP address, a server name, and applicable protocol information of said first system,

said program number comprises an address where a program exists in a server,

5           said version information comprises available service and a program version, and

said applicable resource information includes information indicating which resource in said first system is used.

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8. The collaboration network system according to Claim 7, wherein said second system further comprises:

a job request accepting means for accepting a job request from a user; and

15           a service displaying means for displaying a service available by said second system, wherein after said sequence operation primarily executed by said second system being confirmed, said job execution requesting means registers a function which can be put available by said sequence operation  
20 in said job request accepting means and said service displaying means.

9. The collaboration network system according to Claim 1, wherein said interface means further comprises a task executing means for  
25 storing a necessitated program including a library of a process

task executing said sequence operation, and

executes the program stored in said task executing means to execute said sequence operation in response to said job execution request.

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10. The collaboration network system according to Claim 5, wherein said distribution criteria information comprises:

information peculiar to said first system including basic function, information and versions on basic processing of said first system; and

an externally-available function indicating a sequence to be executed in said second system.

11. The collaboration network system according to Claim 4, wherein said second system further comprises a service managing means for detecting said resource included in said first system at predetermined time intervals, and

updates said collaboration processing information when there is any change of state in said resource of said first system.

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12. The collaboration network system according to Claim 4, wherein said service managing means detects said resource included in said first system in accordance with a state change notifying signal outputted from said first system.

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13. A method of constructing a collaboration network system in which a first system operating in accordance with a first sequence is connected to a second system operating in accordance with a second sequence, and said second system primarily executes a sequence operation while utilizing a resource of said first system,  
5 the method comprising:

a system connection step of connecting said second system to said first system;

an interface incorporation step of incorporating an  
10 interface means into an application layer executing said first sequence of said first system;

an initialization detection step of, by said interface means, detecting said resource included in said first system and generating initialization information; and

15 a task distribution determination step of, in accordance with said detected resource information and predetermined distribution criteria, determining tasks for every job to be executed as a sequence operation of said first system to generate and store collaboration processing information, wherein

20 said interface means causes, in accordance with said collaboration processing information, a part of a sequence operation of said second system to execute as a part of said sequence operation of said first system.

25 14. The method of constructing the collaboration network system

according to Claim 13, further comprising

an available function registration step of, in accordance with said collaboration processing information generated in said task distribution determination step, registering an available  
5 function by said sequence operation in said second system, wherein

in this stage, a function in collaboration processing is started to serve.

15. The method of constructing the collaboration network system  
10 according to Claim 14, further comprising

a change of resource state detection step of detecting a state of said resource included in said first system detected by said initialization detection step at predetermined time intervals, wherein

15 when any change of state in the resource is detected, said initialization detection step, said task distribution determination step, and said available function registration step are executed.

20 16. The method of constructing the collaboration network system according to Claim 13, wherein said system connection step comprises:

a physical connection step of physically connecting said second system to said first system; and

25 a mutual-communication environment establishment step of

establishing a communication path between said physically-connected said first system and said second system.

17. The method of constructing the collaboration network system  
5 according to Claim 16, wherein said interface incorporation step  
incorporates said interface means into said application  
layer executing said first sequence of said first system via said  
communication path established by said mutual-communication  
environment establishment step, and  
10 further incorporates an initialization program into said  
interface means.

18. The method of constructing the collaboration network system  
according to Claim 17, wherein said initialization detection step  
15 comprises:

a collaboration processing environment construction step  
of running said initialization program to provide said first  
system with a mechanism for collaboration processing; and

an available function acquisition step of detecting and  
20 acquiring a function available by said first system from said  
resource of said first system disclosed by a service disclosure  
function of said first system.

19. The method of constructing the collaboration network system  
25 according to Claim 18, wherein said task distribution



determination step

allocates collaboration information, in accordance with  
said distribution criteria, by registering an execution program,  
generating and registering said collaboration processing  
5 information.

20. A second system being connected to a first system operating  
in accordance with a first sequence, and primarily executing a  
second sequence operation while utilizing a resource of said first  
10 system in which an application layer is provided with an interface  
means, wherein

said second system comprises:

a distribution criteria storing means for storing  
distribution criteria when a part of said second sequence  
15 operation is distributed to said first system; and

a job execution requesting means for issuing said  
interface means with a job execution request for having said first  
system execute, and

causes said job execution request to execute as a part of  
20 said first sequence via said interface means.

21. The second system according to Claim 20, comprising:

a distribution criteria storing means for storing  
distribution criteria to distribute said sequence operation to  
25 said first system; and

a job execution requesting means for issuing said interface means with said job execution request for having said first system execute in accordance with said distribution criteria, wherein

5        when receiving said job execution request, said first system executes said job execution request as a part of said first sequence via said interface means.

22. The second system according to Claim 21, wherein said job  
10       execution requesting means

             determines, in accordance with said distribution criteria, a job to be executed in said first system, comprises a job determining means for generating job request information, and generates said job execution request in accordance with said job  
15       request information.

23. The second system according to Claim 21, wherein said interface means further comprises an initialization program,  
             after said interface means running said initialization  
20       program, said first system is caused to detect said resource included in the first system to notify said second system,

             said second system determines, in accordance with the resource of said first system detected by said interface means and said distribution criteria stored in said distribution  
25       reference storing means, tasks for every job to be executed as

said sequence operation of said first system to generate collaboration processing information, and

said job execution requesting means, in accordance with said collaboration processing information, issues said job execution request.

24. The second system according to Claim 23, wherein said interface means further comprises a guest net client information storing means for storing a processing program executing said first sequence registered in said first system,

said initialization program detects initialization information registered in said first system to store in said guest net client information storing means, and

said job execution requesting means, in accordance with said initialization information stored in said guest net client information storing means and said distribution criteria information reserved in said distribution criteria information storing means, generates said collaboration processing information.

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25. The second system according to Claim 24, wherein said collaboration processing information comprises

a procedure to process tasks for every job and addressee information, wherein

said addressee information includes server information, a

program number, version information, and applicable resource information.

26. The second system according to Claim 25, wherein said server  
5 information comprises

an IP address, a server name, and applicable protocol information of said first system,

said program number comprises an address where a program exists in a server,

10 said version information comprises available service and a program version,

said applicable resource information comprises information indicating which resource in said first system is used.

15 27. The second system according to Claim 25, further comprising:

a job request accepting means for accepting a job request from a user; and

a service displaying means for displaying a service available by said second system, wherein

20 after said sequence operation primarily executed by said second system being confirmed, said job execution requesting means registers a function which can be put available by said sequence operation in said job requesting accepting means and said service displaying means.

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28. The second system according to Claim 24, wherein said distribution criteria information comprises:

information peculiar to said first system including basic function, information and version on basic processing of said first system; and

an externally-available function indicating a sequence to be executed in said second system.

29. The second system according to Claim 23, further comprising a service managing means for detecting said resource included in said first system at predetermined time intervals, and

updates said collaboration processing information when there is any change of state in said resource of said first system.

30. The second system according to Claim 23, wherein said service managing means detects said resource included in said first system in accordance with a state change notifying signal outputted from said first system.

31. A recording medium including a program incorporated into an application layer of a first system to be executed in a collaboration network system in which said first system operating in accordance with a first sequence is connected to a second system operating in accordance with a second sequence, the program being for realizing an operational environment in the collaboration

network system comprising:

an initialization detection step of detecting a resource included in said first system and generating initialization information;

5 a task distribution determination step of, in accordance with said detected resource information and predetermined distribution criteria previously possessed by said second system, determining tasks for every job to be executed as a sequence operation of said first system to generate and store collaboration  
10 processing information; and

a step of, in accordance with said collaboration processing information, causing a part of sequence operation of said second system as a part of the sequence operation of said first system.

15 32. A guest system being connected to a host system operating in accordance with a first sequence, and operating in accordance with a second sequence constructing a collaboration network system in which a resource of said host system is utilized, said guest system comprising:

20 a resource detecting means for detecting said resource of said first system; and

a sequence altering means for altering said first sequence in accordance with said detected resource of said host system.

25 33. The guest system according to Claim 32, further comprising

a service adding means for, in accordance with said detected resource of a host system, adding a service function of the host system to a service function of said guest system to generate a new service function.

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34. The guest system according to Claim 33, wherein said service adding means further comprises

a task distributing means determining distribution of tasks between said resources of said host system and said guest system  
10 for every job executing said new service function.

35. The guest system according to Claim 34, wherein said service adding means further comprises

a task distribution information storing means for storing  
15 information on tasks to be allocated between said host system and said guest system for every job executing said new service function.

36. The guest system according to Claim 34, wherein said  
20 resource detecting means repeatedly detects said resource of said host system at predetermined time intervals.

37. The guest system according to Claim 32, wherein said resource detecting means displays a change in said resource of said host  
25 system, if any.

38. The guest system according to Claim 32, further comprising  
an interpreter layer incorporating means for incorporating  
said host system with an interpreter layer accepting a command  
5 from said guest system.

39. The guest system according to Claim 38, further comprising  
a service adding means for adding, in accordance with said  
detected resource of said host system, a service function of said  
10 host system to a service function of said guest system to generate  
a new service function.

40. The guest system according to Claim 38, wherein said  
interpreter layer incorporating means further comprises  
15 a new service execution sequence incorporating means for  
incorporating said host system with a sequence executing a new  
service function.

41. A collaboration network system in which a first system  
20 operating in accordance with a first sequence is connected to a  
second system operating in accordance with a second sequence to  
distribute a job of said second system to a resource of said first  
system, said collaboration network system comprising:

a resource detecting means for detecting said resource of  
25 said first system; and



a sequence altering means for altering said first sequence in accordance with said detected resource of said first system.

42. The collaboration network system according to Claim 41,  
5 further comprising

a service adding means for adding, in accordance with said detected resource of said first system, a service function of said first system to a service function of said second system to generate a new service function.

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43. The collaboration network system according to Claim 42, wherein said service adding means comprises

a task distribution means for determining distribution of tasks between said resources of said first system and said second  
15 system for every job executing said new service function.

44. The collaboration network system according to Claim 43, wherein said service adding means comprises

a task distribution information storing means for storing  
20 information on tasks to be allocated between said host system and said guest system for every job executing said new service function.

45. The collaboration network system according to Claim 41,  
25 wherein said resource detecting means repeatedly detects said

resource of said first system at predetermined time intervals.

46. The collaboration network system according to Claim 41,  
wherein said resource detecting means displays a change of said  
5 resource of said first system, if any.

47. A method of constructing a collaboration network system in  
which a first system operating in accordance with a first sequence  
is connected to a second system operating in accordance with a  
10 second sequence to distribute a job of said second system to a  
resource of said first system, the method comprising:

a resource detection step of detecting said resource of said  
first system; and

a sequence alternation step of altering said first sequence  
15 in accordance with said detected resource of a first host system.

48. The method of constructing the collaboration network system  
according to Claim 47, further comprising

a service addition step of adding, in accordance with said  
20 detected resource of said first system, a service function of said  
first system to a service function of said second system to  
generate a new service function.

49. The method of constructing the collaboration network system  
25 according to Claim 48, wherein said service addition step

comprises

a task distribution step of determining distribution of tasks between said resources of said first system and said second system for every job executing said new service function.

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50. The method of constructing the collaboration network system according to Claim 47, wherein said resource detection step comprises

10 a resource update detection step of repeatedly detecting the resource of said first system at predetermined time intervals.

51. The method of constructing the collaboration network system according to Claim 47, wherein said resource detection step comprises

15 a resource update display step of displaying a change of said resource of said first system, if any.

52. The method of constructing the collaboration network system according to Claim 47, wherein said host system further comprises

20 an interpreter layer incorporation step of incorporating an interpreter layer accepting a command from said guest system.

53. The method of constructing the collaboration network system according to Claim 52, further comprising:

25 a mutual-communication environment construction step of

constructing a mutual-communication environment between said first system and said second system;

a collaboration environment incorporation step of incorporating said first system with a mechanism for achieving  
5 collaboration processing with said second system,

a processing allocation determination step of determining, in accordance with said detected resource, processing allocation between said first and second systems; and

a new function offer step of determining a new function in  
10 accordance with said determined processing allocation, and putting the same available.

54. The method of constructing the collaboration network system according to Claim 52, further comprising

15 a resource update detection step of repeatedly detecting said resource of said first system at predetermined time intervals.

55. The method of constructing the collaboration network system  
20 according to Claim 52, wherein, when a request for carrying out job is generated in said second system,

said second sequence comprises a job request step of transmitting said request for carrying out said job to said interpreter layer, and

25 said interpreter layer comprises a step of controlling said

second system in accordance with the processing allocation.

56. A collaboration network system, in which three or more systems each run according to a unique sequence are linked, and one system located upper to other systems principally performs the sequence while utilizing resources of the systems therebeneath,

among from said linked three or more systems, two adjacent systems are arbitrarily selected, and the upper system to the other is referred to as an upper system and the other as a lower system, wherein

said upper system comprises:

upper interface means embedded in an application layer which performs a sequence unique thereto;

15 distribution criteria storing means for storing distribution criteria which is referred to when the sequence operation unique to said upper system is distributed to said lower system; and

job execution requesting means for issuing a job execution request for said lower system to execute according to said distribution criteria, and

said lower system comprises

lower interface means for performing a sequence unique thereto and, in response to said job execution request from said upper system, executing the job execution request as a part

of the sequence, and

said linked three or more systems execute, in a distributive manner, said issued job execution request from up to bottom.